



Stream Classification Report

PARKER CREEK

WBIC: 2604700

St. Croix County

Kinnickinnic and Pleasant Valley Twp.

Category 2 Trout Fishing Regulation

Class I and II Trout Stream



STREAM DESCRIPTION:

Length: 3.3 miles of Class I trout water and 3.4 miles of Class II.

Mean Stream Width: 4.5 m

Gradient: 2.3 m/km

Base Flow Stream Discharge: 0.19 cms

Stream Character: Coldwater

Stream Order: 4

Habitat Rating: Fair

IBI Rating: Good near mouth; Fair to Poor in remainder

Ecoregion: Western Corn Belt Plains

STOCKING RECORDS: Parker Creek is a naturally reproducing brown and brook trout stream.

PARKER CREEK is a medium sized spring-fed tributary to the Kinnickinnic River. It is located in south central St. Croix County and flows in a north west direction to the Kinnickinnic River. The Parker Creek watershed is heavily agricultural with rolling topography. Parker Creek is Class I trout water from its confluence with the Kinnickinnic River upstream to CTH J and Class II from CTH J upstream to the headwaters. Fish habitat ratings were Fair throughout Parker Creek with the exception of Station 2. Habitat restoration was completed from Pleasant Ave. upstream to CTH J. Stream banks were sloped and stabilized, and the stream narrowed to increase flow. Under bank covers, boulders, and plunge pools were added for fish habitat and gradient control. Coarse substrate is common in this section and cover is abundant. In the remainder of the stream, fine sediments are common. Coarse substrate is more available in the headwaters and lower reaches of the stream. The middle section has more sand and silt. Bank erosion is moderate and fish cover is mainly limited to large woody debris. Creek 13-2 (WBIC: 2604800) and Creek 19-14 (WBIC: 2605000) are Class II tributaries to Parker Creek.

FISHERY:

Parker Creek has naturally reproducing populations of both brook and brown trout. The majority of trout were found downstream of CTH J in the Class I section.

BROWN TROUT were the most abundant species found. Brown trout lengths ranged from 1.5 to 13.8 inches (Fig.1). The mean length of adult brown trout was 7.6 inches.

Class I Section

Stations 1 and 2 had an average total catch per unit effort (CPE) of 6,405 brown trout per mile, placing this segment in the 99th percentile of medium sized streams in this ecoregion. Reproduction was

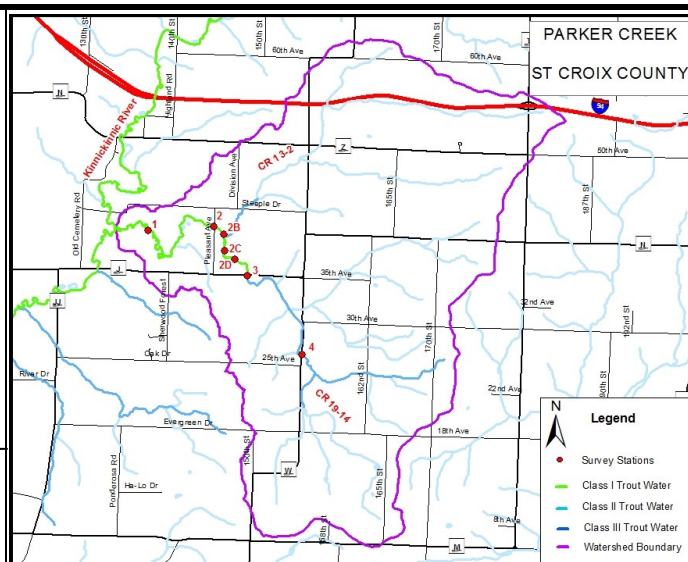


Figure 1 Length distribution

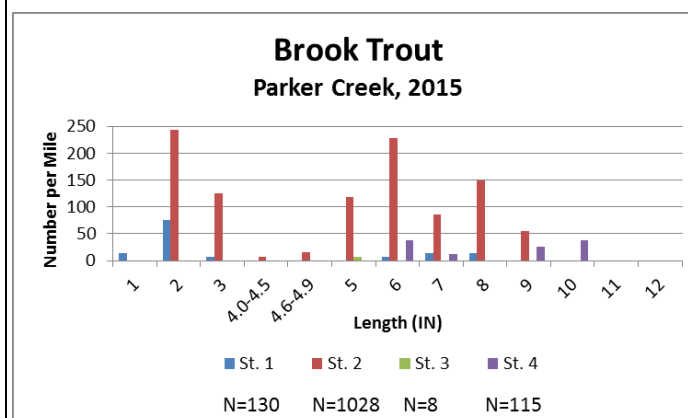
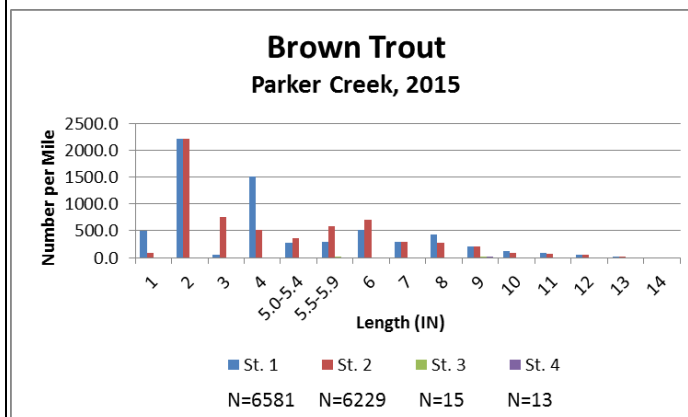


Table 1 Abundance of brown and brook trout (number per mile) at four stations on Parker Creek.
 (-) indicates stations that were not surveyed.

Brown Trout									Brook Trout										
Year	St. 1			St. 2		St. 3		St. 4		Year	St. 1			St. 2		St. 3		St. 4	
	Juv.	Adult		Juv.	Adult	Juv.	Adult	Juv.	Adult		Juv.	Adult	Juv.	Adult	Juv.	Adult	Juv.	Adult	
1963	475	380	0	21	0	0	-	-		1963	972	148	0	0	0	0	-	-	
1973	-	-	-	-	0	21	-	-		1973	-	-	-	-	0	0	-	-	
1981	418	818	66	208	0	155	-	-		1981	0	0	36	36	0	0	-	-	
1989	1591	849	-	-	-	-	-	-		1989	7	13	-	-	-	-	-	-	
1996	8184	1426	892	235	76	194	0	153		1996	223	18	106	88	135	0	0	135	
2004	6273	2020	-	-	-	-	13	102		2004	158	48	-	-	-	-	38	332	
2005	-	-	1028	220	-	-	-	-		2005	-	-	1922	675	-	-	-	-	
2006	-	-	1247	110	-	-	-	-		2006	-	-	934	549	-	-	-	-	
2007	-	-	1404	79	-	-	-	-		2007	-	-	761	39	-	-	-	-	
2008	-	-	2354	126	-	-	-	-		2008	-	-	1106	126	-	-	-	-	
2009	-	-	1334	228	-	-	-	-		2009	-	-	141	71	-	-	-	-	
2010	-	-	2401	1412	-	-	-	-		2010	-	-	149	165	-	-	-	-	
2011	-	-	879	1499	-	-	-	-		2011	-	-	165	392	-	-	-	-	
2012	-	-	1036	1828	-	-	-	-		2012	-	-	251	416	-	-	-	-	
2013	-	-	1216	1122	-	-	-	-		2013	-	-	314	71	-	-	-	-	
2014	-	-	1114	1828	-	-	-	-		2014	-	-	518	494	-	-	-	-	
2015	4273	2027	3954	2275	0	16	0	13		2015	96	34	377	651	0	8	0	115	

strong . Young Of Year (YOY) brown trout CPE averaged 3,933 per mile (99th percentile). Seventeen percent of brown trout sampled were seven inches or larger (legal). Seven percent were 9 inches and larger (quality). Approximately 66 per mile or one percent of brown trout sampled were 12 inches or larger (73-81 percentile).

Class II Section

Stations 3 and 4 in the Class II section, averaged 14 brown trout per mile. The Class II section falls in the 11th percentile for abundance. Two brown trout in the 5.9-9.0 inch range were sampled at Station 3, and one 9.8 inch trout was sampled at Station 4. No reproduction was found upstream of CTH J in this survey.

BROOK TROUT were also found in Parker Creek up to 10.1 inches in length (Fig.1). The average adult length was 7.2 inches.

Class I Section

Most brook trout were sampled at Station 2. The CPE here was 1,028 per mile. Station 1 had a CPE of 130 brook trout per mile. Juvenile abundance was low to moderate (56-79th percentile, CPE 96-392 per mile) with greater reproduction at Station 2. Legal brook trout seven inches and larger comprised 27 percent (CPE 27-290 per mile) of the sample. The maximum length of brook trout found in this section was 9.9 inches. Station 2 is in the 87th percentile for fish seven inches and greater. Station 1 is in the 34th percentile.

Class II Section

One brook trout (5.2 inches) (CPE 8 per mile) was found at Station 3 and nine (CPE 115 per mile) were found at Station 4. No reproduction was evident upstream of CTH J in this survey. Station 4 brook trout reached 10.1 inches in length. More than half (56%) of the brook trout were 9 inches or greater at Station 4. Abundance is low at both stations. Station 3 is in the 8th percentile for adult brook trout and Station 4 is in the 56th percentile.

IBI Scores

The Coldwater Index of Biotic Integrity (IBI) in the Class I area were conducted before habitat improvement. Station 1 rated Good and does not appear to have changed. Station 2 was rated as Fair. Based on observations of surveys done since habitat work was completed, this station most likely rates as Good now. Trout currently dominate the stream and the numbers of tolerant and warmwater species is low. Current Coldwater IBI ratings in the Class II area are Poor at Station 3 and Fair at Station 4. The lack of meaningful numbers of trout at these stations indicates a lack of cold water influence and environmental degradation. Tolerant and warmwater species dominate.

FUTURE MANAGEMENT:

Based on this survey, Parker Creek classifications of Class I upstream to CTH J and Class II from CTH J upstream to the headwaters are correct. The Class I section has strong natural reproduction and several year classes of both species of trout. Parker Creek is part of the Kinnickinnic River Fishery Area. Approximately four miles of stream are protected by fishing easements and state owned land. Habitat restoration was completed on the section from Pleasant Avenue upstream to CTH J during 2009-10 and from CTH J upstream (3,900 ft.) in 2012. Habitat improvement from Pleasant Avenue to J has improved all trout production but promoted brown trout over brook. Future surveys will be needed to document whether any improvements in trout population will occur upstream of CTH J where temperature and flow are limiting factors. More work is needed downstream from Pleasant Avenue. The Parker Creek Watershed suffers from heavy agricultural run-off and flooding. Best Management Practices (BMP) should be implemented to reduce these impacts. Acquisition and restoration of headwater wetlands should continue. Targeted beaver control should continue to prevent colonization of the Fishery Area.

Table 2 Relative abundance of fish species found in Parker Creek in 2015.
 (-) indicates species that were not targeted.

Species	St. 1	St. 2	St. 3	St. 4
Brook Trout	19	131	1	9
Brown Trout	961	794	2	1
Blacknose Dace	-	-	37	7
Brook Stickleback	-	-	0	0
Creek Chub	-	-	53	10
Fantail Darter	-	-	1	3
Fathead Minnow	-	-	0	17
Johnny Darter	-	-	4	6
Longnose Dace	-	-	5	0
Mottled Sculpin	-	-	0	0
Northern Redbelly Dace	-	-	0	1
White Sucker	-	-	0	0

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